

XLVI.—*On the Fossil Red Deer of Ireland: Observations founded on the Skeletons found at Bohoe, in the County Fermanagh, in 1863.* By the Rev. SAMUEL HAUGHTON, M.D., Fellow of Trinity College, Dublin.

DURING the spring of the present year, in the drainage of a small lake near Bohoe, in Fermanagh, a number of bones of Red Deer, with those of some other animals, were discovered in the sludge that underlay the bog through which the drainage operations were being carried on. These bones were secured by the Rev. William Steele of Portora, and were by him presented to the Geological Museum of Trinity College.

The following list contains an enumeration of the bones found:—

Red Deer.

2 lower jaws.	} Five individuals.
2 heads, with antlers.	
2 heads without horns, and 1 fragment of upper jaw.	
3 atlantes.	
3 axes.	
15 other cervical vertebræ.	
66 dorsal and lumbar vertebræ.	
4 sacra.	
4 pelves.	
91 ribs.	
6 scapulæ; 3 right and 3 left.	
9 humeri; 5 right and 4 left.	
8 radii and ulnæ; 4 right and 4 left.	
8 femora; 4 right and 4 left.	
10 fibulæ and tibiæ; 6 right and 4 left. (Six individuals).	
6 metatarsal bones.	
8 metacarpal bones.	
7 sternal bones.	
3 ossa calcis.	
6 phalanges and 2 hoofs.	
18 small tarsal and carpal bones.	
25 fragments of other bones.	

In addition to these bones, which were all those of the fossil Red Deer, there were found the following:—

- 1 right humerus of a young pig.
- 1 left femur of a calf(?).

These fossils were all found in marl underlying bog, in the same situation, geologically speaking, as that in which the *Cervus megaceros* has been always found in Ireland.

One of the ribs had been broken and repaired during life, with the production of bony spiculæ, which must have caused the unfortunate brute much pleurodynia during the process of healing.

I was fortunate enough to be able to demonstrate the exist-

ence, among these bones, of two complete spinal columns, from an examination of which it became evident that the fossil Red Deer of Fermanagh had 14 ribs; so that its vertebræ, as compared with the living Red Deer, are as follows:—

<i>Fossil Red Deer.</i>	<i>Recent Red Deer.</i>
7 cervical.	7 cervical.
14 dorsal.	13 dorsal.
5 lumbar.	6 lumbar.
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On examining the teeth, I found the posterior molars trilobate, while those of the recent Red Deer are, at least sometimes, only bilobate; however, on examining for me an excellent skeleton of the recent Red Deer preserved in the Museum of the Royal Dublin Society, Dr. A. Carte found the posterior molar of one side bilobate, and that of the other side trilobate—thus demonstrating the trivial character of the lobation of the molars. Two of the tarsal bones, also, were soldered together in both legs, while they are separate in the recent Red Deer; but upon this character I am not disposed to lay much stress, as it frequently occurs in the *Cervus megaceros*, and is probably the result either of old age or of rheumatic disease of the ankle-joint.

It will be observed, from the list of bones, that six individuals, at least, contributed their remains to the “find” of the Bohoe bones.

These bones are considerably larger than those of the only two skeletons of Red Deer to which I have had access, and are also larger than the corresponding bones of the fossil Reindeer in the Royal Dublin Society’s Museum. This fact and the presence, in two specimens, of 14 instead of 13 dorsal vertebræ indicate a considerable difference between the fossil Red Deer of Ireland and the existing Red Deer, and may justify the name by which the fossil Red Deer is known in many parts of Ireland—viz. *the Marsh Deer*, which is considered to be like, but not the same as, the Red Deer.

The restored skeletons of the Fermanagh Red Deer are preserved in the Museums of Trinity College and of the Royal Dublin Society, and are well worthy of the examination of anatomists.

I believe that we are entitled to consider our fossil Red Deer as a well-marked variety, and would propose for it the provisional name of *Cervus elaphus*, var. *fossilis Hibernica*.

In addition to the bones described above, the skull of a pig was found; and the animal to which it had belonged had evi-

dently been killed by a blow on the forehead, that had broken the skull. This circumstance shows that the bones of the Red Deer, Pig, &c., belong to the human, and probably historical, period, to which also, I believe, in common with Irish antiquarians, the remains of the *Cervus megaceros* belong.

XLVII.—*Observations on Raphides and Sphæraphides.*

By GEORGE GULLIVER, F.R.S.

[Continued from p. 367.]

Balsaminaceæ.—We have already incidentally mentioned this as a raphis-bearing order (Annals, Sept. 1863), and will now compare it with its relations. In our Flora they stand thus:—

Linaceæ.	BALSAMINACEÆ.	Oxalidaceæ.
Geraniaceæ.		Celastraceæ.

And *Balsaminaceæ* is not more plainly isolated and distinguished here in print than in the type of nature as a raphidiferous order. All the plants belonging to it which I have examined (to wit, *Impatiens glandulifera*, two other exotic species, and numerous varieties of the common greenhouse Balsam) abound in raphides, while the other orders, allies of *Balsaminaceæ*, are not so characterized.

But these other orders afford, in the leaves and other parts, *sphæraphides* instead, and sometimes so beautifully in the form of *sphæraphid*-tissue as to exhibit a better example of it than that depicted in *Lythrum salicaria* (Annals, Sept. 1863). In the sepals of *Geranium striatum* and *G. sanguineum*, for instance, this is very remarkable—a tissue of cells, each cell containing a distinct nucleus of *sphæraphides*. Doubtless John Quekett saw the same thing as an isolated fact in this genus (Lindley's Elem. Bot. 1849, p. 17). The leaves and other parts of *Oxalidaceæ* abound in *sphæraphides*, like those of *Polygonaceæ*.

How completely such functions of plant-life are dependent on the species itself, rather than either on the soil, food, or situation, is as well shown by these examples as by those formerly described in *Onagraceæ* and *Lythraceæ*, and in the different species of *Lemna*. The two *Geraniums* above-named and *Balsams* have been growing close together in my garden, and yet each plant always afforded its peculiar crystals—constantly *sphæraphides* in the first- and as constantly raphides in the last-named plants.

In short, this is not merely an incidental or artificial distinction, but a regular and natural difference—by no means a trivial or minor fact, but a central and comprehensive phenomenon.